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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,580	10/24/2003	Atsushi Ueda	AIS-0010	6948

23353 7590 11/03/2004

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EXAMINER

HAILEY, PATRICIA L

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,580

Applicant(s)

UEDA ET AL.

Examiner

Patricia L. Hailey

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on March 25, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date March 25, 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Applicants' Preliminary Amendment, filed on October 24, 2003, has been made of record and entered. In this amendment, claims 13 and 14 have been amended to eliminate multiple claim dependency. No claims have been canceled or added.

Claims 1-17 remain pending in this application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Document was filed on October 24, 2003.

Claim Objections

2. Claim 15 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 15 fails to further limit the subject matter of claim 13, from which it depends. In its' last two lines, claim 15 recites "an anode catalyst according to claim 13". However, although claim 13 contains the recitation "an anode catalyst", the

claim is directed to a fuel cell ("A fuel cell comprising the anode catalyst according to claim 1,...").

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 13 is indefinite because it contains a redundant phrase. In claim 13, the phrase "comprising the anode catalyst according to claim 1, further including an anode containing catalyst" is redundant.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1, 2, 9, 13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Taylor et al. (U. S. Patent No. 5,041,195).**

Taylor et al. teach an electrocatalyst material comprising particulate elemental gold, wherein the particles are apparently crystalline in nature, and smaller in size than 5 nm (considered to read upon the phrase "fine particles"). The particles are supported on carbon black or particulate conductive ceramic-like compounds. See col. 3, lines 13-22 and lines 38-40 of Taylor et al., as well as col. 10, lines 56-68.

The electrocatalyst material may be employed in gas diffusion electrodes, or as an anode in a cell containing an acid electrolyte. See col. 5, lines 4-32 of Taylor et al., as well as col. 16, line 42 to col. 17, line 35. This disclosure is considered to read upon the limitations of claim 15.

In view of these teachings, Taylor et al. anticipate claims 1, 2, 9, 13, and 15.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 3-8, 10-12, 14, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al. (U. S. Patent No. 5,041,195).

Taylor et al. is relied upon for its teachings in the above 102(b) rejection. Additionally, the reference at col. 13, line 52 to col. 14, line 19 teaches that additional metallic components may be present in Patentees' electrocatalytic material, i.e., Group IB and Groups VII, IVB, VB, VIB, VIIB, particularly nickel and cobalt, as well as metals from the second and third triads of Group VIII.

The metals recited in Applicants' claims are encompassed by the aforementioned Groups (i.e., zirconium and titanium are Group IVB metals, vanadium is a Group VB metal, cobalt and nickel are Group VIII metals, etc.). Therefore, one of ordinary skill in the art would find reasonable expectation in selecting metals from the Groups recited in Taylor et al., and thus obtain Applicants' claimed invention.

Claim Rejections - 35 USC § 102/ 35 USC § 103

10. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Starz et al. (U. S. Patent Application Publication No. 2002/0034675).

Starz et al. teach nanoparticles containing noble metals alone or in combination with base metals. The nanoparticles are for producing membrane electrode assemblies (MEAs) for fuel cells, such as polymer electrolyte membrane fuel cells (PEMs). See paragraphs [0001], [0003], and [0007] of Starz et al.

Examples of the noble metal include platinum, palladium, rhodium, iridium, ruthenium, osmium, gold, and silver. Suitable base metals include titanium and vanadium. Additionally, the nanoparticles exhibit a particle size of between 0.1 and 100 nm (considered to read upon the limitation “fine particles”). See paragraph [0019] of Starz et al., as well as claims 1, 6, 7, 22, and 23.

The nanoparticles may be employed to prepare supported electrocatalysts, wherein the nanoparticles are deposited onto a suitable carbon black material. See paragraph [0029] of Starz et al.

Paragraph [0047] and Figure 3 of Starz et al. show the structure of a PEM coated with two catalyst layers, each comprising a supported electrocatalyst and unsupported nanoparticles. One layer functions as the anode, and the other functions as the cathode.

In view of these teachings, Starz et al. anticipate claims 1-17.

In the alternative:

While the Examples of Starz et al. do not include specific examples of anode catalysts containing gold particles, because this reference teaches that the nanoparticles can contain gold, it would have been obvious to one skilled in the art

to reasonably expect that gold particles would perform equivalently to the particles exemplified in Starz et al. The Examples of Starz et al. are merely preferred embodiments, and are not considered the crux of the invention described therein. Teachings of a reference are not limited to a preferred embodiment. In re Boe, 145 U.S.P.Q. 507 (CCPA 1966).

Conclusion

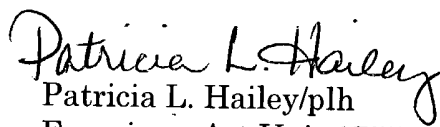
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (571) 272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Patricia L. Hailey/plh
Examiner, Art Unit 1755
October 21, 2004


Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700